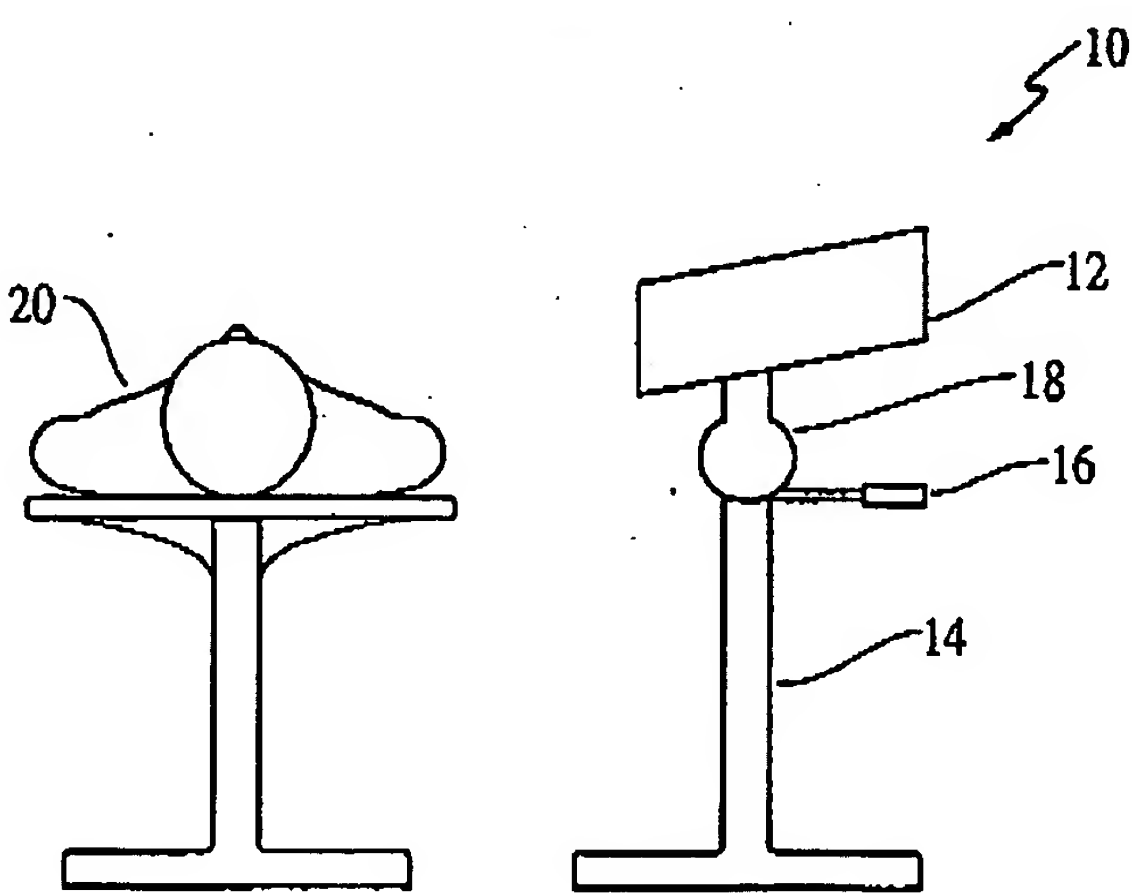


PCTWORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61B 5/00		(11) International Publication Number: WO 99/22640
A3		(43) International Publication Date: 14 May 1999 (14.05.99)
(21) International Application Number: PCT/US98/22961		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
(22) International Filing Date: 30 October 1998 (30.10.98)		
(30) Priority Data: 08/961,294 30 October 1997 (30.10.97) US 60/093,041 10 November 1997 (10.11.97) US		
(71) Applicant: HYPERMED IMAGING, INC. [US/US]; 315 Russett Avenue, Chestnut Hill, MA 02115 (US).		
(72) Inventors: LEWIS, Edgar, N.; 18420 Shady View Lane, Brookeville, MD 20833 (US). FREEMAN, Jenny, E.; 27 Lyon Road, Chestnut Hill, MA 02167 (US).		
(74) Agents: REMENICK, James et al.; Baker & Botts, L.L.P., The Warner, Suite 1300, 1299 Pennsylvania Avenue, N.W., Washington, DC 20004-2400 (US).		(88) Date of publication of the international search report: 19 August 1999 (19.08.99)
(54) Title: MULTISPECTRAL/HYPERSPECTRAL MEDICAL INSTRUMENT		
		
(57) Abstract		
<p>A medical instrument that comprises: a first-stage optic (40) responsive to a tissue surface of a patient; a spectral separator (42) optically responsive to the first stage optic and having a control input; an imaging sensor (46) optically responsive to the spectral separator and having an image data output; and a diagnostic processor (38) having an image acquisition interface (50) with an input responsive to the imaging sensor and a filter control interface (52) having a control output provided to the control input of the spectral separator (42).</p>		

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Switzerland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece	ML	Mali	TR	Turkey
BG	Bulgaria	HU	Hungary	MN	Mongolia	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MR	Mauritania	UA	Ukraine
BR	Brazil	IL	Israel	MW	Malawi	UG	Uganda
BY	Belarus	IS	Iceland	MX	Mexico	US	United States of America
CA	Canada	IT	Italy	NE	Niger	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NL	Netherlands	VN	Viet Nam
CG	Congo	KE	Kenya	NO	Norway	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NZ	New Zealand	ZV	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	PL	Poland		
CM	Cameroon	KR	Republic of Korea	PT	Portugal		
CN	China	KZ	Kazakhstan	RO	Romania		
CU	Cuba	LC	Saint Lucia	RU	Russian Federation		
CZ	Czech Republic	LI	Liechtenstein	SD	Sudan		
DE	Germany	LK	Sri Lanka	SE	Sweden		
DK	Denmark	LR	Liberia	SG	Singapore		
EE	Estonia						

INTERNATIONAL SEARCH REPORT

Inter. Appl. Application No.

PCT/US 98/22961

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 A61B5/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 A61B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 07889 A (LOCKHEED MARTIN ENERGY SYSTEMS, INC.) 14 March 1996	1-6, 8-11, 20-22
A	see page 4, line 7 - line 28 see page 9, line 5 - page 14, line 17	7,14,18
X	WO 92 15008 A (MASSACHUSETTS INSTITUTE OF TECHNOLOGY) 3 September 1992	1,4-6,8, 9,11,12
Y	see page 3, line 20 - page 7, line 15 see page 11, line 9 - page 14, line 23	2,3,13, 15,16,19
Y	EP 0 783 867 A (UNILEVER PLC ET AL) 16 July 1997	2,3
A	see column 4, line 13 - column 6, line 18 see column 9, line 49 - column 10, line 49	1,4-22
	-/-	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

28 June 1999

Date of mailing of the international search report

06/07/1999

Name and mailing address of the ISA

European Patent Office, P.O. Box 5518 Patentaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Geffen, N

Form PCT/ISA/210 (second sheet) (July 1993)

page 1 of 2

INTERNATIONAL SEARCH REPORT

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		Inter. Appl. Application No PCT/US 98/22961
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2 300 045 A (Y. PALTIELI) 23 October 1996 see page 1, line 4 - line 12	13,15, 16,19
A	US 4 515 165 A (R. CARROLL) 7 May 1985 see column 3, line 52 - column 5, line 64	1,4-11
A	EP 0 063 431 A (MASAOKI KONOHI) 27 October 1982 see page 5, line 23 - page 7, line 6	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/22961

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9607889 A	14-03-1996	US 5599717 A AU 3583395 A BR 9508693 A CA 2230777 A EP 0778939 A NZ 293404 A	04-02-1997 27-03-1996 06-01-1998 14-03-1996 18-06-1997 25-11-1998
WO 9215008 A	03-09-1992	CA 2104960 A EP 0573535 A JP 6505183 T	27-08-1992 15-12-1993 16-06-1994
EP 0783867 A	16-07-1997	CA 2186333 A JP 9173048 A US 5760407 A	22-06-1997 08-07-1997 02-06-1998
GB 2300045 A	23-10-1996	DE 19614374 A FR 2732885 A US 5807264 A	02-01-1997 18-10-1996 15-09-1998
US 4515165 A	07-05-1985	AU 547510 B AU 6675481 A BE 887366 A CA 1149631 A DE 3103609 A FR 2481454 A GB 2068537 A,B JP 56119232 A	24-10-1985 13-08-1981 01-06-1981 12-07-1983 03-12-1981 30-10-1981 12-08-1981 18-09-1981
EP 0063431 A	27-10-1982	JP 57168141 A ² JP 1513886 C JP 58005631 A JP 63064736 B US 4505583 A DE 3277548 A	16-10-1982 24-08-1989 13-01-1983 13-12-1988 19-03-1985 03-12-1987

Form PCT/ISA/210 (patent family annex) (July 1982)